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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,957	03/22/2007	Hakan Holmberg	47113-5069-00-US	5279
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EXAMINER ZIMMERMAN, JOHN J				
ART UNIT 1784		PAPER NUMBER		
NOTIFICATION DATE 01/21/2011		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DBRIPDocket@dbi.com

penelope.mongelluzzo@dbi.com

Office Action Summary

Application No.

10/577,957

Applicant(s)

HOLMBERG, HAKAN

Examiner

John J. Zimmerman

Art Unit

1784

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/3/2011 (RCE and Amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 17-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 20110103
- 4) ☐ Interview Summary (PTO-413)
Paper No.(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

THIRD OFFICE ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 3, 2011 has been entered.

Amendment

2. This Third Office Action is in response to the correspondence titled "Response and Amendment Under 37 C.F.R. 1.111 & Request for Continued Examination under 37 C.F.R. 1.114" received January 2, 2011. Claims 12 and 17-23 are pending in this application.

Information Disclosure Statement

3. The information disclosure statement received January 3, 2011 has been considered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12, 17 and 20-23 are rejected under 35 U.S.C. 103(a) as obvious over Vyas (U.S. 2003/0228512 A1) in view of Andersson-Drugge (U.S. Patent 6,197,132).

6. Vyas '512 discloses using ion-assisted etching to remove the oxides from the surface of a stainless steel strip and depositing a coating that has excellent adhesion and relatively "uniform coverage" (e.g. see paragraph [0056]). The coating is applied by electron beam evaporation (e.g. see paragraph [0061]) and can be noble metals such as Ru, Rh, Pd, Ag, Ir, Pt and Os, but is preferable Au (e.g. see paragraph [0008]). The coatings can be multiple layer coatings where the layers are made of different metals (e.g. see paragraph [0053]). The coating can be less than 100 nm thick (e.g. see paragraph [0009], claim 1) and the physical vapor deposition provides a "smooth and even coating" (e.g. see paragraph [0066]). It would have been prima facie obvious to one of ordinary skill in the art to use coating thicknesses over this entire range since Vyas discloses that this range is encompassed by his invention. In addition, in view of the function of the noble metal layer as an electrically conducting, oxidation resistant and acid resistant coating (e.g. see paragraph [0035]), it would also have been obvious to one of ordinary skill in the art at the time the invention was made to use thicker coatings than those disclosed by Vyas in order to further improve the conductivity, oxidation resistance and acid resistance if economically viable for a particular end use. Regarding claim 17, although Vyas uses 316L stainless steel in the examples (e.g. see paragraph [0060]), it would have been obvious to one of ordinary skill in the

art at the time the invention was made to select any stainless steel for the substrate that would have suitable corrosion resistant and structural properties. A review of applicant's disclosure shows no patentable distinction for any particular stainless steel over any other stainless steel. While Vyas may not require that the stainless steel having a specific minimum tensile strength of 1000 MPA (e.g. claim 17), the selection of stainless steel stock material to meet the various property requirements of different end uses is well within the level of ordinary skill in the art and it would have been obvious to one of ordinary skill in the art to use higher tensile strength stainless steels whenever they are required by the anticipated end use. Vyas may not require that the strip have a thickness of between 0.015 mm and 3.0 mm (e.g. claim 12, line 10), but it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the stainless steel substrate to provide structural integrity while not added significantly to the weight and costs of the coated material. No patentable distinction has been found for applicant's strip thickness range over any other thickness range that would be obvious in the art. While Vyas may not require that the layer tolerance is maximally +/- 30% of the layer thickness, it would be expected that the adhesion properties and tolerances for Vyas's layers would be similar to those of applicant's article because both Vyas and applicants use vapor deposition processes. Note that Vyas specifically states that physical vapor deposition provides a "smooth and even coating" (e.g. see paragraph [0066]) and thus one of ordinary skill in the art would expect the coating to have good tolerance values. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden

of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977). In addition, the examiner notes that there is an inherent motivation in the art to maintain good quality control of manufactured products. It would have been obvious to one of ordinary skill in the art to maintain a tight tolerance of the coatings and strips in order to produce a good, commercially viable product. Vyas may differ from the claims in that Vyas may not disclose that Vyas's etching process and coating process are done in different chambers. Vyas, however, does clearly disclose that his process of cleaning and coating are done "essentially simultaneously" (e.g. see paragraph [0055]) which is an improvement over "sequential cleaning and depositing" (e.g. see paragraph [0056]) and therefore the use of sequential cleaning and depositing is clearly obvious even if not preferred. All the disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art even though the art teachings relied upon are phrased in terms of a non-preferred embodiment or even as being unsatisfactory for the intended purpose, *In re Boe*, 148 USPQ 507 (CCPA 1966); *In re Smith*, 65 USPQ 167 (CCPA 1945); *In re Nehrenberg*, 126 USPQ 383 (CCPA 1960); *In re Watanabe*, 137 USPQ 350 (CCPA 1963). See MPEP 2123. Vyas differs from the pending claims in that Vyas does not use a "continuous roll-to-roll process" (e.g. claim 12, line 3). The examiner notes, however, that it has long been held that it is obvious to replace a batch process with a continuous process. See *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963). See MPEP 2144.04(V)(E). One of ordinary skill in the art readily understands that continuous processes can result in lower

production costs and higher production output. Therefore, there is an inherent motivation in the art to use a continuous process where production and equipment economics allow for a continuous process. Andersson-Drugge is applied to clearly show that continuous roll-roll deposition apparatuses are well known in the prior art (e.g. see Figure 2) and that they are obvious apparatuses for applying physical vapor deposition coatings on stainless steel substrates (e.g. see Example 1). Therefore, there is no patentable distinction in adapting Vyas's process to continuous roll-to-roll production.

7. Claims 12, 17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto (U.S. Patent 4,999,259), in view of Andersson-Drugge (U.S. Patent 6,197,132) or Ito (JP 63-79955).

8. Hashimoto discloses ion-assisted etching the surface of stainless steel to remove surface oxides and then using electron beam evaporation to deposit a chromium layer in a thickness of from 0.01 to 1 μm (e.g. see Example 3; column 3, lines 1-34; column 3, lines 64-68). Specific coating thicknesses can be found in Tables 2 and 3 (e.g. 0.1 μm , 1 μm). Therefore, it would have been prima facie obvious to one of ordinary skill in the art to use coating thicknesses over this entire range since Hashimoto discloses that this range is encompassed by his invention. Regarding claim 17, although Hashimoto uses SUS 430 stainless steel in the examples (e.g. see Table 3), it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any stainless steel for the substrate that would have suitable corrosion resistant and structural properties. A review of applicant's disclosure shows no patentable

distinction for any particular stainless steel over any other stainless steel. While Hashimoto may not require that the stainless steel having a specific minimum tensile strength of 1000 MPA (e.g. claim 17), the selection of stainless steel stock material to meet the various property requirements of different end uses is well within the level of ordinary skill in the art and it would have been obvious to one of ordinary skill in the art to use higher tensile strength stainless steels whenever they are required by the anticipated end use. Hashimoto may not require that the strip have a thickness of between 0.015 mm and 3.0 mm (e.g. claim 12, line 10), but it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the stainless steel substrate to provide structural integrity while not added significantly to the weight and costs of the coated material. No patentable distinction has been found for applicant's strip thickness range over any other thickness range that would be obvious in the art. While Hashimoto may not require that the layer tolerance is maximally +/- 30% of the layer thickness, it would be expected that the adhesion properties and tolerances for Hashimoto's layers would be similar to those of applicant's article because both Hashimoto and applicants use vapor deposition processes. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, In re Best, Bolton, and Shaw, 195 USPQ 431 (CCPA 1977). In addition, the examiner notes that there is an

inherent motivation in the art to maintain good quality control of manufactured products. It would have been obvious to one of ordinary skill in the art to maintain a tight tolerance of the coatings and strips in order to produce a good, commercially viable product. Hashimoto may differ from the claims in that Hashimoto may not disclose that Hashimoto's etching process and coating process are done in different chambers in a "continuous roll-to-roll process" (e.g. claim 12, line 3). The examiner notes, however, that it has long been held that it is obvious to replace a batch process with a continuous process. See *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963). See MPEP 2144.04(V)(E). One of ordinary skill in the art readily understands that continuous processes can result in lower production costs and higher production output. Therefore, there is an inherent motivation in the art to use a continuous process where production and equipment economics allow for a continuous process. Andersson-Drugge is applied to clearly show that continuous roll-to-roll deposition apparatuses are well known in the prior art (e.g. see Figure 2) and that they are obvious apparatuses for applying physical vapor deposition coatings on stainless steel substrates (e.g. see Example 1). Ito is applied to show the same in addition to using ionized argon to clean the substrate before the coating step in the continuous roll-to-roll process (e.g. see abstract and Figure 1). Therefore, in view of Andersson-Drugge and Ito, there is no patentable distinction in adapting Hashimoto's process to continuous roll-to-roll production.

9. Claims 12 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (JP 63-79955) in view of Hashimoto (U.S. Patent 4,999,259).

10. Ito discloses a roll-to-roll process (e.g. see Figure 1) using ion-assisted etching of a stainless steel strip to remove surface oxides and then using a coating process, e.g. sputtering, ion plating, plasma CVD, etc., to successively deposit one or more kinds of Pb, Sn, Ni, Cu, Au, Ag, Pt and alloys thereof without being exposed to air (e.g. see abstract and entire document). Therefore, the use of multiple deposition chambers and multiple coatings is clearly obvious in view of Ito's teachings. Regarding claim 17, although Ito uses SUS 430 and SUS 304 stainless steel in the examples (e.g. see Table 1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any stainless steel for the substrate that would have suitable corrosion resistant and structural properties. A review of applicant's disclosure shows no patentable distinction for any particular stainless steel over any other stainless steel. While Ito may not require that the stainless steel having a specific minimum tensile strength of 1000 MPA (e.g. claim 17), the selection of stainless steel stock material to meet the various property requirements of different end uses is well within the level of ordinary skill in the art and it would have been obvious to one of ordinary skill in the art to use higher tensile strength stainless steels whenever they are required by the anticipated end use. Ito may not require that the strip have a thickness of between 0.015 mm and 3.0 mm (e.g. claim 12, line 10), but it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the stainless steel substrate to provide structural integrity while not added significantly to the weight and costs of the coated material. No patentable distinction has been found for applicant's strip thickness range over any other thickness range that would be obvious in the art. Likewise, it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the layers in any thickness that would be required for the

end product. While Ito may not require that the layer tolerance is maximally +/- 30% of the layer thickness, it would be expected that the adhesion properties and tolerances for Hashimoto's layers would be similar to those of applicant's article because both Ito and applicants use vapor deposition processes. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, In re Best, Bolton, and Shaw, 195 USPQ 431 (CCPA 1977). In addition, the examiner notes that there is an inherent motivation in the art to maintain good quality control of manufactured products. It would have been obvious to one of ordinary skill in the art to maintain a tight tolerance of the coatings and strips in order to produce a good, commercially viable product. While Ito discloses that coating processes such as sputtering, ion plating, plasma CVD, etc., can be used to successively deposit one or more kinds of Pb, Sn, Ni, Cu, Au, Ag, Pt and alloys (e.g. see abstract), Ito may differ from the claims in that Ito may not specify that an electron beam evaporation coating process may be used (e.g. claim 12, line 7). Hashimoto, however, clearly shows that electron beam evaporation is an obvious method of applying coatings to stainless steel substrates (e.g. see Example 3) and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to alternatively use an electron beam

evaporation coating process for the coating process of Ito since Hashimoto clearly shows electron beam evaporation is a proven deposition method in the art for coating stainless steel.

Response to Arguments

11. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new grounds of rejection. The new rejections address the new claim limitations (e.g. "continuous roll-to-roll process", etc. . .) that were presented in the amendment received January 3, 2011.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John J. Zimmerman
Primary Examiner
Art Unit 1784

/John J. Zimmerman/
Primary Examiner, Art Unit 1784

jjz
January 17, 2011